

**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

5 1. An all terrain vehicle chemical applicator, comprising:
an elongate frame having opposed sides;
at least six independent support wheels positioned along
the opposed sides of the frame, such that at least four
wheels are always in contact with the ground to support the
10 frame;

suspension for each of the support wheels including a
support having a first end and a second end, the first end of
the support being pivotally mounted to the frame, one of the
support wheels being rotatably mounted to the second end of
15 the support, and at least one shock absorber disposed between
each support and the frame, to absorb shocks as the supports
are forced to adjust to variations in terrain;

a chemical applicator mounting platform pivotally
secured to the frame on which are mounted chemical
20 applicators, means being provided to position the chemical
applicator mounting platform in an operator selected
orientation relative to the terrain; and

an automatic motion dampening control system controlling
the positioning means to constantly reposition the chemical
25 applicator mounting platform to dampen disruptive motions and
average surface roughness oscillations that can not be
dampened by the suspension.

2. The all terrain vehicle chemical applicator as defined in
30 Claim 1, wherein the chemical applicators are spray
booms.

3. The all terrain vehicle chemical applicator as defined in
Claim 1, wherein the chemical applicators are spray
35 nozzles of a boomless spray applicator system.

4. The all terrain vehicle chemical applicator as defined in Claim 1, wherein the support is an arm.

5 5. The all terrain vehicle chemical applicator as defined in Claim 1, wherein the at least one shock absorber is at least one air bag.

6. The all terrain vehicle chemical applicator as defined in
10 Claim 5, wherein there are dual air bags.

7. The all terrain vehicle chemical applicator as defined in Claim 5, wherein two or more air bags along one of the opposed sides of the frame are in fluid communication,
15 such that excess loading on one of the air bags is transferred to other of the air bags along that opposed side.

8. The all terrain vehicle chemical applicator as defined in
20 Claim 1, wherein the wheels have flotation tires.

9. The all terrain vehicle chemical applicator as defined in Claim 1, wherein a subframe member is pivotally mounted to the frame above each of the supports, the shock absorbers are
25 disposed between the supports and the subframe member, and a fluid activated telescopic preload cylinder acts upon the subframe member to pivot the subframe member into a selected pivotal position, thereby setting basic ride height and clearance.

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10. The all terrain vehicle chemical applicator as defined in Claim 9, each supports and its associated subframe member having a common pivot axis.

35 11. The all terrain vehicle chemical applicator as defined

in Claim 1, wherein several of the wheels have independent hydraulic drive.

12. The all terrain vehicle chemical applicator as defined
5 in Claim 1, wherein the frame has a front portion and a rear
portion, a pivoting joint being provided between the front
portion and the rear portion which accommodates pivotal
movement about a substantially vertical pivot axis, but does
not permit relative oscillation of the front portion and the
10 rear portion.

13. An all terrain vehicle chemical applicator, comprising:

an elongate frame having a front portion, a rear portion and opposed sides, a pivoting joint being provided between the front portion and the rear portion which accommodates pivotal movement about a substantially vertical pivot axis, but does not permit relative oscillation of the front portion and the rear portion;

a plurality of subframe members pivotally mounted to the opposed sides of the frame;

at least six independent support wheels positioned along the opposed sides of the frame, such that at least four wheels are always in contact with the ground to support the frame;

an independent hydraulic drive for several of the wheels;

suspension for each of the support wheels including a support arm having a first end and a second end, each support arm being mounted below an associated one of the subframe members with the first end of the support arm being pivotally mounted to the frame co-axially with the associated subframe member, one of the support wheels being rotatably mounted to the second end of the support arm, dual air bag shock absorbers disposed between each support arm and the associated subframe member to absorb shocks as the support arms are forced to adjust to variations in terrain, at least one of the air bag shock absorbers for one of the support arms along one of the opposed sides of the frame being in fluid communication with at least one of the air bag shock absorbers for another of the support arms along one of the opposed sides, such that excess loading on one of the air bag shock absorbers is transferred to other of the air bag shock absorbers along that opposed side;

fluid activated telescopic preload cylinders acting upon each subframe member to pivot the subframe member into a

selected pivotal position, thereby setting basic ride height and clearance for each of the support arms;

5 a chemical applicator mounting platform pivotally secured to the frame on which are mounted chemical applicator booms, several fluid activated telescopic control cylinders being provided to position the chemical applicator mounting platform in an operator selected orientation relative to the terrain; and

10 an automatic motion dampening control system including a controller coupled to the telescopic control cylinders and position sensors, the controller receiving input from the position sensors and activating the telescopic control cylinders to constantly reposition the chemical applicator mounting platform to dampen disruptive motions that would
15 otherwise travel along the chemical applicator booms and to average surface roughness oscillations that can not be dampened by the suspension.

20 14. The all terrain vehicle chemical applicator as defined in Claim 13, wherein the wheels have flotation tires.